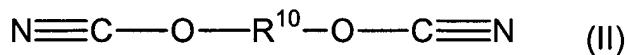


**AMENDMENTS TO THE CLAIMS:**

Please cancel claim 6, without prejudice or disclaimer, amend claims 7-10, and add new claim 12-16. This listing of claims will replace all prior versions and listings of claims in the application:

1-6. (Cancelled).

7. (Currently Amended) An optical waveguide system or waveguide structure as claimed in claim [[6]] 12, wherein the polycyanate resin has been copolymerized from at least one dicyanate of formula I, and at least one difunctional cyanate of formula II:



wherein

$\text{R}^{10}$  is  $\text{C}(\text{R}')_2-\text{R}''-\text{C}(\text{R}')_2$ , wherein each  $\text{R}'$  is [[,]] independently selected from the other, hydrogen, [[or]] fluorine, [[or]] an optionally substituted alkyl groups, [[or]] and alkenyl groups, and  $\text{R}''$  is selected from [[a]] non-aromatic hydrocarbon groups [[or]] and may have an aryleneic structures,

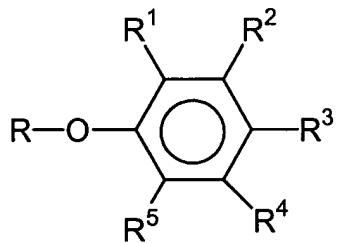
wherein the difunctional cyanate of formula II comprises at least one fluorine atom.

with the proviso that (II) carries at least one fluorine atom.

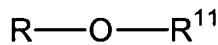
8. (Currently Amended) An optical waveguide system or waveguide structure as claimed in claim 7, wherein the ~~optionally substituted~~ alkyl or alkenyl group of R' is fluorinated.

9. (Currently Amended) An optical waveguide system or waveguide structure as claimed in claim 7, wherein the polycyanate resin has been copolymerized from at least one dicyanate of formula I, ~~optionally~~ at least one difunctional cyanate of formula II, and at least one of the following compounds:

(i) monocyanates having formula IIIa or IIIb:



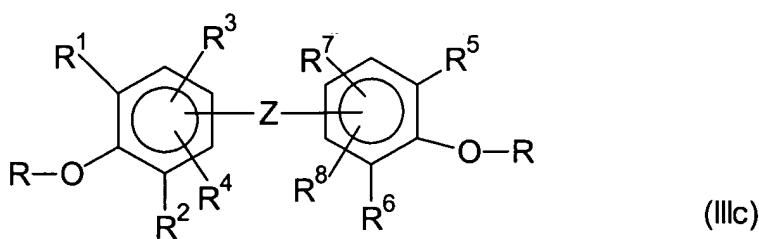
IIIa



IIIb,

wherein R<sup>1</sup> to R<sup>5</sup> are as previously defined for the dicyanate of formula I, R is N≡C- and R<sup>11</sup> is a straight, branched, or cyclic non-aromatic hydrocarbon radical or a non-aromatic hydrocarbon radical comprising a cyclic structure[.].

(ii) phenols having either formula IIIa above or formula IIIc:



(IIIc)

wherein Z and R<sup>1</sup> to R<sup>8</sup> are as defined above for formula I and R is hydrogen[[,]];:

(iii) monoalcohols having formula IIb wherein R<sup>11</sup> is as defined above, and wherein R is hydrogen,

(iv) non-aromatic dihydroxy compounds having formula Vd



wherein R is hydrogen and R<sup>10</sup> is as defined for the dicyanates of formula IV above, and

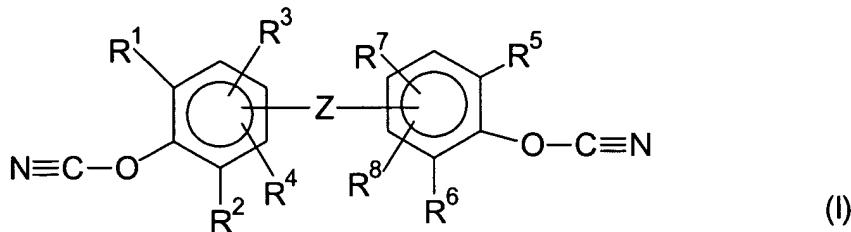
(v) glycidethers glycidylethers of formulas IIIa to IIIc wherein R is glycidyl, the other radicals being as defined above.

10. (Currently Amended) An optical waveguide system or waveguide structure as claimed in any of one of claims ~~6 to 9~~ 7, 8, 9, or 12, wherein both the first and the second materials are in the form of a thin layer, the layers directly adhered to each other.

11. (Previously Presented) An optical waveguide system or waveguide structure according to claim 10, wherein either the waveguide is made of the first material and at least one of a buffer layer and a cladding layer is made of the second material, or the waveguide is made of the second material and at least one of a buffer layer and a cladding layer is made of the first material.

12. (New) An optical waveguide system or waveguide structure comprising at least

- (a) a first material selected from poly(perfluorocyclobutanes); which is in direct contact with
- (b) a second material selected from polycyanate resins (co)polymerized from at least one difunctional cyanate of formula (I);



wherein

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, and R<sup>8</sup> are independently selected from hydrogen, halogen, C<sub>1</sub>-C<sub>10</sub> alkyl groups, C<sub>3</sub>-C<sub>8</sub> cycloalkyl groups, C<sub>1</sub>-C<sub>10</sub> alkoxy groups, phenyl groups, and phenoxy groups;

Z is selected from a chemical bond, SO<sub>2</sub>, CF<sub>2</sub>CH<sub>2</sub>, CHF, CH(CH<sub>3</sub>), isopropylene, hexafluoroisopropylene, n-C<sub>1</sub>-C<sub>10</sub> alkylene groups (optionally substituted with at least one fluorine), iso-C<sub>1</sub>-C<sub>10</sub> alkylene groups (optionally substituted with at least one fluorine), O, NR<sup>9</sup>, N=N, CH=CH, C(O)O, CH=N, CH=N-N=CH, alkyloxyalkylene groups (having 1 to 8 carbon atoms), S, and Si(CH<sub>3</sub>)<sub>2</sub>;

R<sup>9</sup> is selected from hydrogen and C<sub>1</sub>-C<sub>10</sub> alkyl groups; and

wherein said at least one difunctional cyanate is substituted with at least one fluorine atom.

13. (New) The optical waveguide system or waveguide structure of claim 12, wherein the alkyl groups included in formula (I) are selected from unfluorinated alkyl groups, fully fluorinated alkyl groups, and alkyl groups comprising at least one fluorine atom.

14. (New) The optical waveguide system or waveguide structure of claim 12, wherein the alkyl groups included in formula (I) are fully fluorinated.

15. (New) The optical waveguide system or waveguide structure of claim 12, wherein the aryl groups included in formula (I) are selected from unfluorinated aryl groups, fully fluorinated aryl groups, and aryl groups comprising at least one fluorine atom.

16. (New) The optical waveguide system or waveguide structure of claim 12, wherein the aryl groups included in formula (I) are fully fluorinated.